Book Chapter in African Research and Resource Forum, *Research Networking and Regional Development Policy-Making in the East African Community (EAC)*, 90-113. Nairobi: ARRF, 2012.

CHALLENGES FACING TRANSPORT INFRASTRUCTURE IN THE EAST AFRICAN COMMUNITY

Nashon Adero[1] and Eric Aligula[2]
Kenya Institute for Public Policy Research and Analysis (KIPPRA)
P.O. Box 56445, 00200 Nairobi, Kenya
Telephone: +254-20-2719933/4; Fax: +254-20-2719951
E-mail: [1]nashon.adero@gmail.com; [2]mealigula@gmail.com

Abstract

The cost of doing business in the East African Community (EAC) is very high relative to other regional blocs. The poor state of regional transport infrastructure and sub-optimal mix of transport modes contribute substantially to this unfavourable fact. This paper used comparative indicators to assess the performance of transport infrastructure in the EAC, middle-level economies and other major players in Africa. It highlighted the key transport master plans in the region and interventions needed for integrated, efficient, and effective regional transport infrastructure network. For greater synergy, the need to construct and invigorate missing and weak links featured strongly. The outcome of this assessment is multifaceted. With respect to particular transport modes, extending pipeline infrastructure in the region promises increased cost-effectiveness and safety in transporting petroleum products. Similar benefits apply to railway infrastructure which, if extended and modernised, will substantially enhance goods freight in the region and further yield positive feedback through cost-savings that can then be channelled to developing and sustaining the rail infrastructure and other supporting transport modes. Inland waterways are underutilised and need to be developed for enhanced contribution to the region's transport and logistics. Safety standards need to be intensified in all cases, especially road and air transport. Policy harmonisation is necessary to streamline the regional transport infrastructure development, regulation and operations. Under human resource development, the study recommends local capacity building. Improved design and workmanship is key. Optimal utilisation of technology transfer opportunities and policy frameworks comprising cross-country working groups are critical to meeting the region's transportation planning challenges. In the proposed strategic way forward, the paper recognises the critical role of research and development as well as appropriate technology in reducing operation costs, improving governance, and ensuring environmental sustainability. Also deserving a place in the EAC's top priority list are quality data and information, cost-sharing mechanisms, and innovative public-private partnerships that can generate sustainable infrastructure capital.

Contents

1 Introduction

Transport infrastructure includes transit-oriented structures and facilities for signage and markings, safety, lighting, communication, landscaping, navigation and maintenance. Infrastructure in Africa is generally in a poor state due to major problems taking the form of under-maintenance, budget execution failures, and substantial hidden costs. Transport infrastructure in the East African Community (EAC) is no exception to this ominous experience. The recently launched EAC common market faces a major obstacle in the huge infrastructure deficit, which has seen the 2010 – 2011 Global Competitiveness Report rank the EAC member states at position 101 and below out of 139 countries in terms of infrastructure competitiveness. The poor transport infrastructure performance makes the cost of doing business in the EAC high, by far exceeding the Asian scenario.

Economic and other research findings confirm that inadequate infrastructure is a major impediment to economic growth. Enhanced per capita economic growth is a common result of improved infrastructure networks, a fact echoed in the Regional Economic Outlook for Sub-Saharan Africa in 2010 by the IMF. Besides challenges related to hard infrastructure are regulatory and institutional issues that also impact heavily on transport sector performance and limit trade and growth opportunities. The EAC can rely on improved transport infrastructure for reduced costs of doing business, thereby boosting trade and socioeconomic development in the region. It has been widely appreciated that investments in infrastructure, particularly roads and energy infrastructure, form a key structural factor of sustained growth for countries on their development paths. This fact motivates research on how improved transport infrastructure can boost global competitiveness in the EAC, a region already realising increasing regional integration momentum in Sub-Saharan Africa.

There is a broad consensus among regional scientists that the availability of human capital and modern transport infrastructure defines, among other factors, a necessary (but generally not sufficient) requirement for regional growth. At the same time, the presence of these factors is of little help if they are not used effectively (Schaffer, et.al., 2010). Schaffer and Siegele (2009) have argued that infrastructure capital can be considered a necessary condition to extend regional production potential but not a sufficient requirement for enhanced regional competitiveness and income. A region's higher production potential rather relies on its ability to utilise existing and additional infrastructure capital in an efficient way.

The purpose of this paper is to build a strong case for investing in improved transport infrastructure in the East African Community. This has been informed by the challenges the region is facing due to its poor transport network connectivity and the trade, investment and development opportunities that can be unlocked by improving this sector's performance.

1.1 Objectives

The main objectives of this paper are twofold:

a) to identify the major bottlenecks and institutional challenges facing transport infrastructure in the EAC; and
b) to recommend measures for effective delivery of the EAC's regional transport infrastructure and services.

The key questions addressed are on the kind of transport-related development constraints the EAC is experiencing and which measures the member states can take to ensure effective and efficient delivery of the regional transport infrastructure and economic services.

1.2 Policy Justification

Infrastructure has always been unmistakably categorised as a basic pillar of global competitiveness – a fundamental enabler to development blueprints all over the world. Transport infrastructure exerts pivotal significance in the cost of doing business and the interaction between markets; both are critical elements for the competitiveness of the EAC bloc as a common market. For the East African Community, the question is to not only secure the building of appropriate regional transport infrastructure but also to optimally utilise the same through appropriate linkages to the transport demands of various development clusters in the region. Improved transport infrastructure is a prerequisite for reducing the high transaction costs that have become the norm within the region. The sub-optimal mix of transport modes in the region also suppresses the overall competitiveness of the EAC bloc.

Policy harmonisation on EAC's transport and logistics issues is another outstanding issue that is needy of urgent solutions. Political considerations need to have high regard for long-term gains and amenity values that sustainable development of the region's natural resources assures. In this light therefore, policy, social and environmental concerns associated with regional transport infrastructure development should be given no less weight than economic imperatives.

Regional transport infrastructure is critical to the region in creating suitable employment and yielding positive development outcomes for its young and growing population. Without it, there will be no effective trade between member states, which is key to providing linkages between sources of raw material, manufacturing centres and local, regional and global markets, and promoting regional trade including access to centres of economic activity.

More importantly, regional transport infrastructure is vital in facilitating regional cohesion or integration in the long term. It is vital for the social integration of citizens of the East African Community and its wider hinterland. The pattern of regional transport infrastructure determines the ability of the region to manage and achieve its development outcomes. Its spatial spread and operational performance can either promote or adversely affect the region's ability to compete in the global markets.

2 Definition of Regional Transport Infrastructure

In this paper, regional transport infrastructure is defined from two perspectives namely, the modes and delivery processes. With respect to modes, regional transport infrastructure includes road transport, rail transport, pipeline, air transport, and maritime and inland waterways. These modes comprise the critical arteries for movement of personnel and materiel key to the development and integration of the East African Community (EAC) and its future prosperity. These transport modes are further highlighted below, in terms of their key features and challenges.

a) Maritime and inland waterways transport

- Key to linking the EAC to the world.
- There is ineffective utilisation of inland waterways, a setback to closing the logistics infrastructure gap.
- The cost of container transport within the EAC is very high, higher than from some Asian countries to the EAC.

b) Railway transport

- Key to efficient and effective movement of raw materials, and refined goods and services.
- Key regional corridors are performing poorly and if not revamped are a liability to the region's growth prospects.

c) Air transport

- Key hubs are around Jomo Kenyatta International Airport, Dar es Salaam, Entebbe, Kigali and Lokichogio Airports.
- Safety of the airspace and cost of its utilisation are key concerns.

d) Road transport

- Currently the main artery of transport.
- On its own, it renders costs of freight and speed of movement unfavourable to the competitiveness of the regional bloc.
- Safety of the mode in question given the high road crash rates in the region and the attendant high transaction costs.

e) Pipeline transport

- Makes substantial contribution to reducing transport costs of petroleum products over long distances.
- Helps reduce road deterioration and the high risks associated with heavy tankers in the case of road transport.
- Kenya Pipeline Company Ltd. a key player in the region through its long pipeline infrastructure from Mombasa to towns near Uganda.

- Extension of the pipeline infrastructure within the EAC and increasing flow rates hold the key to greater cost-effectiveness, environmental safety and road asset preservation when transporting petroleum products in the regional bloc.

Their sub-optimal modal mix is, however, an enormous setback to the achievement of an efficient and effective logistics framework essential to the region's competitiveness.

3 Concept for Regional Transport Infrastructure

There needs to be a strong justification for the choices of the types of infrastructure to develop in order to meet anticipated demand. Proper modal mix is a principal requirement. Ensuring high quality and suitable technology in construction processes is crucial. Transport infrastructure development offers vast opportunities for technology transfer; hence, there should be robust mechanisms to transfer technology and skills for local capacity building and skills retention. Regulation of the regional transport sector and other governance issues should be directed at ensuring cost-effectiveness and efficient service delivery. Figure 1 illustrates the key questions that must be answered if regional transport infrastructure is to deliver effectively and efficiently.

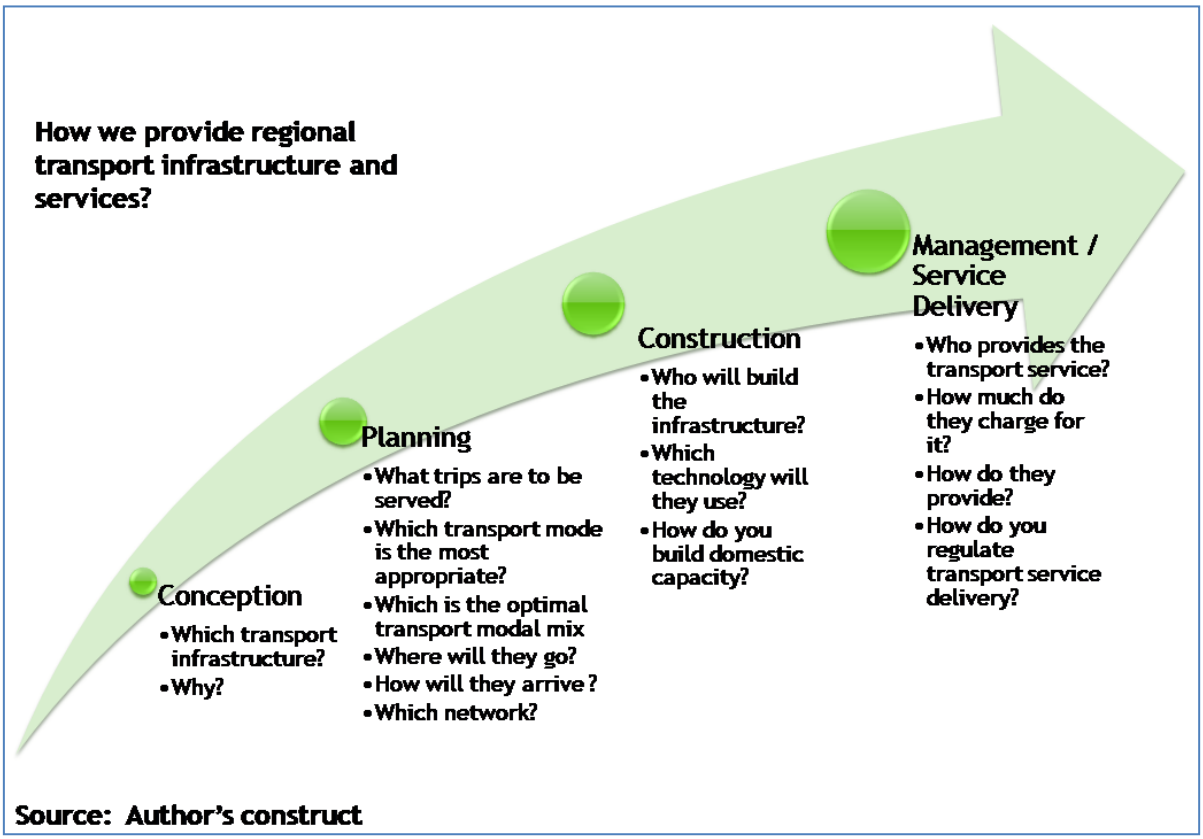

Figure 1: Key considerations in delivering regional transport infrastructure and services

To effectively deploy regional transport namely, infrastructure and attendant services, appropriate assignment of competencies and responsibilities is important. In this regard, there are two key distinctions*: provision* and *production*. Provision refers to the assignment of constitutional/legal mandate to deliver transport infrastructure and services, while production refers to the actual delivery of the transport infrastructure and services thereof.

The next section of this paper highlights the region's relative position in transit trade. It uses comparative indicators to assess the performance of transport infrastructure in the EAC.

4 Assessment of Regional Transport Infrastructure Performance

The UN Conference on Trade and Development (UNCTAD) indicates that high total import costs rate freight costs in Africa at double the world average. The EAC's huge transport infrastructure deficit, especially in railway network, contributes substantially to the high cost of transport in the region. It is believed that effective railway network gives more than 50% competitive advantage over trucks in East Africa. Faster degradation of roads in the region and congestion externalities augment the huge losses in regional transit trade and productive working hours. Airfreight in the region is low in comparison to countries like South Africa. Though Kenya leads the EAC in airfreight with 295 million ton-kilometres realised in 2008, which was far ahead of Egypt's 195 million, Uganda's 30 million and Tanzania's 1.5 million ton-kilometres, this was still far below South Africa's record of 761 million ton-kilometres in 2008; however, for South Africa this was the lowest record since 2001 (World Bank, 2010).

The competitiveness of the EAC in international trade, for which maritime transport is critical, is also hindered by congestion at the ports, inadequate container capacity and dismal transhipment performance. The Port of Mombasa can only be the EAC's transhipment hub after major dredging. The prospects for export-led growth are dimmed under the current underperforming scenario. The cost of importing a 20-foot container is much higher in the EAC countries (between three and five times as much as in Malaysia, Singapore and Mauritius). The import cost for a 20-foot container excluding tariffs and trade taxes for Kenya and Tanzania in 2009 was 2,190 and 1,475 US dollars respectively (World Bank, 2010).The performance of EAC's transport infrastructure can be rated against other countries in the continent using the following comparative indicators.

4.1 Burden of Customs Procedures

This indicator measures a country's efficiency in customs procedures. Between the years 2007 and 2009, Uganda and Kenya were rated to be more efficient in customs procedures among the EAC countries, trailed by Burundi and Tanzania (World Bank, 2010).

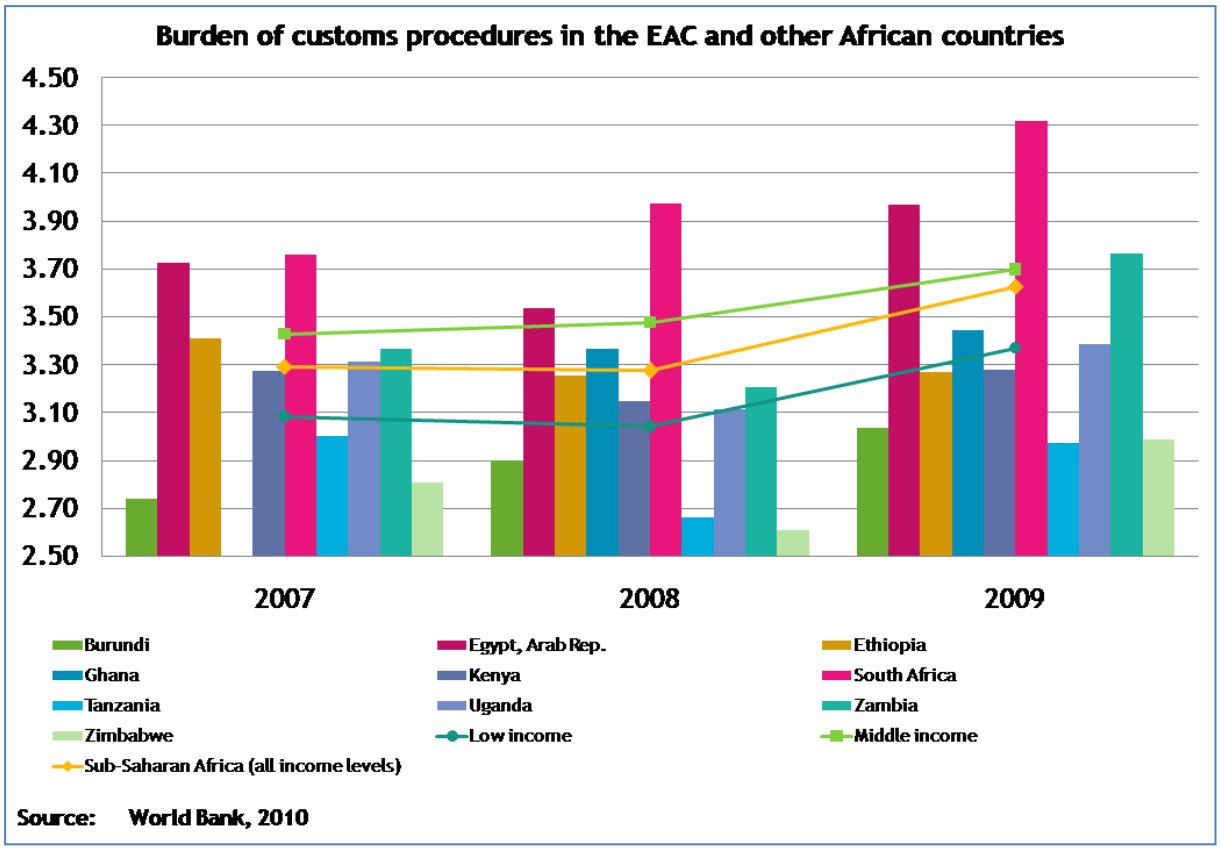

Figure 2: Comparative burden of customs procedures in the EAC

As shown in Figure 2, Burundi and Tanzania scored below the average for low-income countries throughout the period, with only Uganda sustaining performance above the low-income category since Kenya performed below the low-income countries in 2009. The importance of regional stability can be seen as the regional performance dipped sharply in 2008, which coincided with post-election violence in Kenya. Mainstreaming customs procedure in the regional bloc with greater improvements in poor performers like Tanzania and Burundi is essential to efficient regional transport and logistics. On this indicator, South Africa and Egypt are the closest examples to emulate in Africa; their efficiency of customs procedures has exceeded the average performance of middle-income countries. Improving port efficiency requires a reduction of waiting times at berths and dwell time for cargo and containers. Reducing random checkpoints and the multiple police and customs clearance processes is also critical to improving efficiency.

4.2 Liner Shipping Connectivity Index (LSCI)

This important indicator of connection to global shipping networks is crucial in maritime transport sector performance. The major share of international trade (over 90% for most cases in the region) relies on maritime transport. The liner shipping connectivity of Kenya and Tanzania has been increasing gradually over the period 2004 – 2009, but significantly lower than the connectivity of Ghana, South Africa and Egypt.

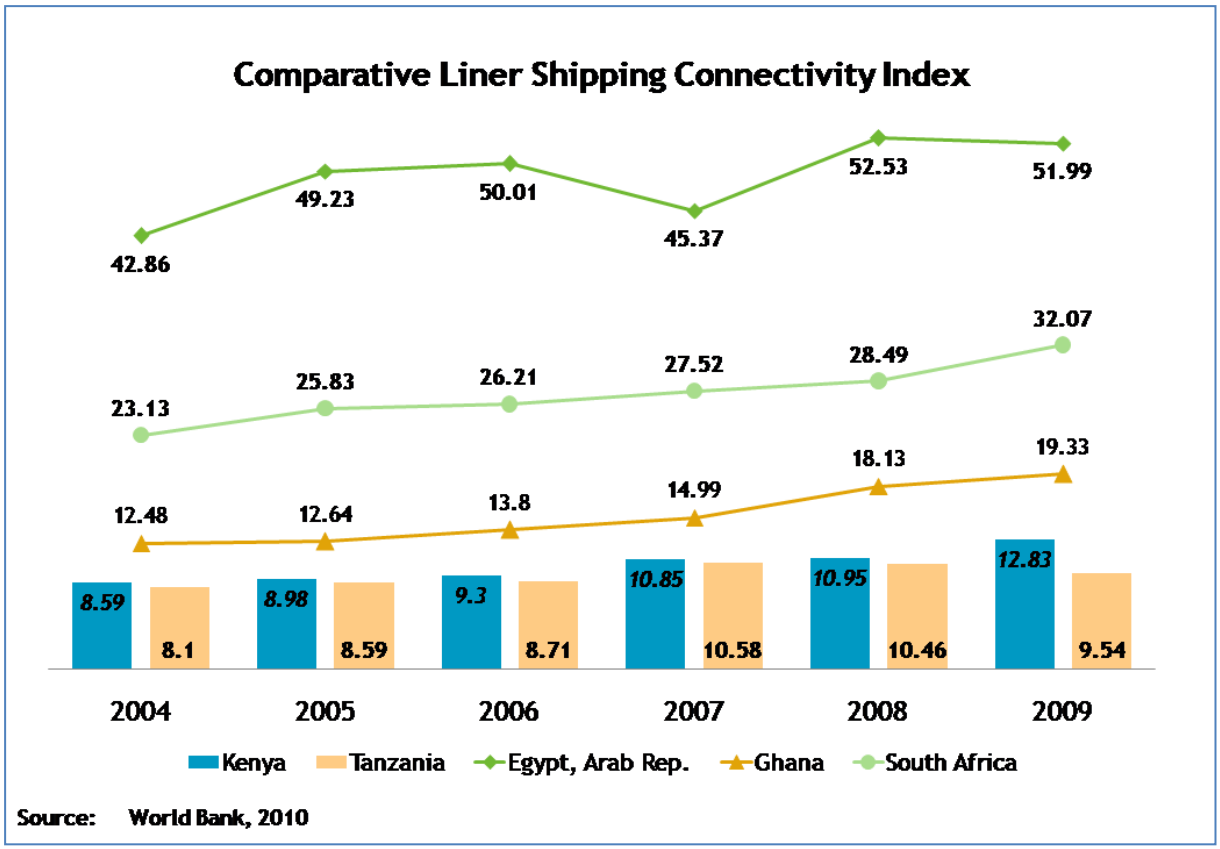

Figure 3: Comparative liner shipping connectivity index

The low LSCI score among the EAC countries requires them to increase accessibility to global trade, through strengthening transhipment functions of the Port of Mombasa, increasing container carrying capacity per capita, increasing the number of ships and the vessel size for greater economies of scale, and establishing more shipping companies that are efficient in their scheduled services and spatial coverage.

4.3 Quality of Port Infrastructure

In the EAC, Uganda's quality of port infrastructure remained high in the period 2007-2008, but continued to decline past 2008 to be at par with the low-income country average in 2009. Despite Kenya's steady rise in port infrastructure quality over the same period, the performance did not match the middle-income country average.

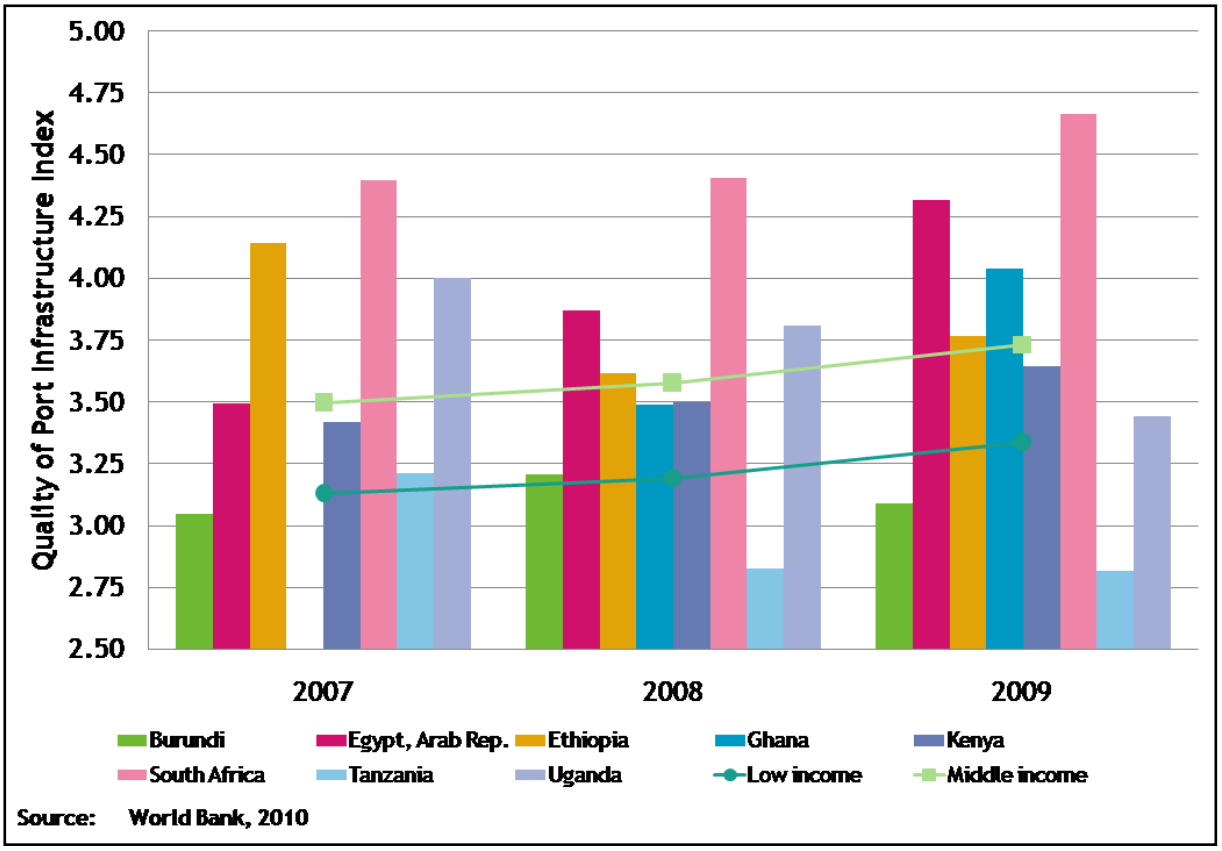

Figure 4: Quality of port infrastructure

As shown in Figure 4, there is great need to improve port infrastructure quality especially in the case of Tanzania and Burundi where this index has consistently fallen below the low-income country average.

4.4 Motorisation Level

At 21 motor vehicles[1] per 1000 people as of the year 2007, Kenya maintained a higher level of motorisation than the other EAC countries. In the same year, the estimated motorisation levels per 1000 people according to the World Bank's development indicators were 4 for Rwanda, 6 for Burundi, 7 for Uganda and 12 for Tanzania. This was at par with the estimate for low-income countries of 11, but below the Sub-Saharan average of 30 and middle-income estimate of 78. Particular states such as Ghana, Zimbabwe and South Africa already had much higher motorisation levels than the EAC states by the year 2007, estimated at 33, 106 and 159 respectively.

Comparing the difference between all motor vehicles and passenger cars[2] among the countries (see Table 1) gives a proxy measure of the availability of buses for public transport and freight vehicles for goods transport. This measure is important in assessing the share of transport services available for public transit and commercial freight, and is

[1] Motor vehicles include cars, buses, and freight vehicles but do not include two-wheelers

[2] According to World Development Indicators, passenger cars refer to road motor vehicles, other than two-wheelers, intended for the carriage of passengers and designed to seat no more than nine people (including the driver).

therefore an important indicator of how a country's road transportation system is oriented to serving mass public mobility demands.

High-capacity passenger vehicles need to be made a key preference for the EAC, as they also offer additional environmental benefits such as reduced per capita emissions and enhanced space economy. These benefits can further be increased and sustained by improving railway freight performance in the EAC states. Integration of non-motorised transport through appropriate infrastructure is also needed for increased benefits.

Table 1: Motorisation level in the EAC and other African countries

Country/region	Motor vehicles per 1000 people	Passenger cars per 1000 people	Difference per 1000 people
Seychelles	173	103	70
South Africa	159	108	51
Middle income	78	55	23
Zimbabwe	106	91	15
Ghana	33	21	12
Tanzania	12	2	10
Sudan	28	20	8
Zambia	18	11	7
Kenya	21	15	6
Sub-Saharan Africa (all income levels)	30	24	6
Eritrea	11	6	5
Uganda	7	3	4
Burundi	6	2	4
Low income	11	7	4
Ethiopia	3	1	2
Rwanda	4	2	2

Source: World Bank, 2010

From the last column of Table 1, Tanzania topped the EAC on this differential indicator. Better still, unlike Kenya that came second but had more than twice as many passenger cars as other motor vehicles (buses and freight vehicles), Tanzania had five times as many vehicles in the category of buses and freight vehicles as passenger cars. Uganda and Burundi also had more of buses and freight vehicles than passenger cars. With prospects for increased economic and population growth, mass transit solutions should be a prime objective of the EAC's road sector expansion policy and strategy. Along with this should be increased safety measures and enabling technology for greater efficiency and effectiveness in the regional transport services.

4.5 Land Transport

Land-based transport modes are predominant in the EAC. There are three important modes of land-based transport in the EAC namely, road, railway and pipeline transport. Roads play a critical role in passenger transport and goods freight in the region. As shown by the

trend of motorisation levels in the EAC, roads will still be playing a central role in public transit. Improving the coverage and quality of roads in the EAC region is therefore a key policy issue. Emphasis needs to be placed on efficient planning and construction for adequate connectivity to facilitate traffic flows, and adherence to well thought out and technically evaluated maintenance programmes in order to preserve the valuable road assets. The percentage of roads paved in EAC countries is still at par with low-income countries (about 10%), with only Uganda and Rwanda scoring higher (above 15%) as per the World Development Indicators (World Bank, 2010).

Pipeline transport offers a cheaper and safer means of transporting petroleum products in the EAC. Expansion of pipeline connections and increasing flow rates for the Mombasa-Nairobi pipeline is therefore a welcome example of the practical interventions for improved performance in the regional transport sector.

Railway passenger transport in the EAC is still far below the level of middle-income economies. While middle-income economies recorded an average of approximately 1,300 million passenger-kilometres in the years 2007 and 2008, the EAC's performance remained low. Tanzania recorded a modest 475 million passenger-kilometres in 2007 and Kenya 250 million passenger-kilometres in 2008, according to the 2010 World Development Indicators. Egypt and South Africa are Africa's top performers in railway passenger transit, with Egypt sustaining about 40,000 million passenger-kilometres per year over the 2000 – 2008 period against about 14,000 million passenger-kilometres a year for South Africa over the same period. The development indicators also show South Africa and Egypt leading the group in railway goods transport, with many more million ton-kilometres of goods transported per year than in the EAC region, as shown in Table 2.

Table 2: Railway goods transport in million ton-kilometres

Country / Region	2000	2001	2002	2003	2004	2005	2006	2007	2008
Egypt	3,980	4,299	4,254	4,188	4,188	3,917	3,917	3,917	4,188
Ghana	161	220	***	242	242	242	***	***	181
Kenya	1,492	1,603	1,538	***	1,399	1,399	1,399	1,399	1,399
Middle income	2,282	***	4,081	***	3,898	4,368	3,917	3,957	4,214
South Africa	106,605	105,393	103,717	106,538	108,503	108,513	108,513	108,513	106,014
Sudan	1,164	877	993	***	889	756	766	765	766
Tanzania	1,990	1,380	1,487	1,468	1,351	1,196	728	***	***
Uganda	210	220	218	***	218	***	***	***	***

Source: World Bank, 2010

The EAC region's poor performance on rail transport calls for concerted railway transport infrastructure development. This will enhance goods freight in the region and offset the excessive burden on roads. Expanding, upgrading to standard gauge, and modernising the EAC's railway infrastructure are critical steps to ensuring a more efficient and effective movement of passengers and goods. This will further strengthen connectivity between

ports and points of delivery further inland, where high quality roads can then facilitate optimal inland conveyance of goods and services. Channelling most of bulk freight in the EAC to railway transport will result in cost savings that can then support other infrastructure developments, and in turn deliver on the funding needs for maintenance of the rail infrastructure itself.

4.6 Air transport

Kenya's air passenger and freight performance has been better than her neighbours' Uganda and Tanzania over the years. Kenya's airfreight rose from 77 million ton-kilometres in the year 2000 to 301 million ton-kilometres in the year 2006, before dropping to 295 million ton-kilometres in the year 2008. Tanzania remained mostly between one and three million ton-kilometres and Uganda mostly between 20 and 30 million ton-kilometres for the same period. Kenya has been realising more air passengers over the years. Kenya recorded a high of 2.88 million passengers in 2008, which was more than the numbers realised by Mauritius and Tanzania, but below Egypt and South Africa.

5 EAC Transport Infrastructure Development Challenges: Ongoing Developments and Key Issues

Challenged by the below-average performance and motivated by lessons from better performing economic blocs, the EAC has already embarked on major transport master plans requiring massive investments to achieve. Some transport projects are already being implemented while some are at the early planning stages. There have also been earnest efforts towards harmonising regional transport policies and regulations. Political will from all the member states remains a central factor of success in the ongoing efforts to reform policy and regulatory frameworks. In developing supportive regional transport infrastructure and services, the EAC is also faced with several issues. The issues are classified here as bottlenecks and institutional challenges. The bottlenecks and institutional challenges have been outlined and concisely explained.

5.1 Ongoing Transport Infrastructure Developments and Policy Reforms

The deputy secretary general for infrastructure and planning has confirmed that the EAC should raise 25 billion US dollars to upgrade railways in the bloc. This is good news to the region's transport infrastructure portfolio (BMI, 2011) especially if the upgrade is targeted to address the bottlenecks of limited capacity and slow speeds in railway transport. International freight traffic (mainly trucks) has lately been too slow in the region, several kilometres of traffic jam being a common scene. Foster (2008) identified clearance delays and other non-tariff barriers to be a major contributor to this slow speed.

There are plans to build EAC's standard gauge railway network in phases, beginning from Kenya in February 2012 (BMI, 2011). Upgrading the regional railway network to the standard gauge will facilitate effective mass transit. National efforts in developing mass rapid transit systems with emphasis on modern railway systems can be found in Kenya,

where a consortium of engineers and planners has been developing plans for implementing Bus Rapid Transit (BRT) systems and a modern metropolitan railway network for the Nairobi metropolitan region. Kenyan and Ugandan rail networks are to be linked officially and extended to Sudan and Ethiopia (Ibid). The railway master plan includes the following lines which are to be upgraded or constructed: Mombasa-Malaba-Kampala; Kampala-Kigali-Bujumbura; Lamu-Lokichogio-Juba; and Nairobi-Moyale-Addis Ababa. The railway master plan proposes linkages between the two key ports in the EAC namely Dar es Salaam and Mombasa. A rail line linking Musongati in Burundi and Kigali is also planned (BMI, 2011). The plan also includes constructing new lines and upgrading strategic links between Mombasa, Kampala, Dar es Salaam and Isaka in northern Tanzania. These ambitious plans have given rise to the idea of setting up an EAC rail development fund, rail committee and project implementation committee with a component of public-private partnership (PPP).

Privatisation is gaining acceptance as a way of improving infrastructure service delivery, an example being the Kenyan railway network that is undergoing concessioning for 25 years. Privatisation of weighbridges is also considered a viable intervention in axle load management. External aid from international donors is, however, necessary to offset the huge investment burden needed to improve the railway network in this relatively financially deprived bloc – giving the challenge an international relations dimension.

The roads sub-sector is poised for a major boost since there is a roads master plan comprising five strategic corridors totalling 12,000km in the EAC: the 1,700km Northern Corridor and 1,300km Central Corridor being the primary EAC freight corridors. Upon upgrading and rehabilitation, these corridors will ensure improved mobility and connectivity in the regional bloc.

Kenya has been performing better than the other EAC countries in air transport, both in passengers and cargo. As the EAC's trade hub and largest economy, improved air transport infrastructure promises great gains. The ongoing upgrading of key airports like Jomo Kenyatta International Airport (JKIA) and Kisumu Airport with the assistance of the World Bank is therefore a welcome development that needs to be emulated by the other member states. The Kenya Airports Authority (KAA) is planning to complete by 2015 a second runway at JKIA as a key component of the northern corridor infrastructure.

The ports of Mombasa and Dar es Salaam are crucial in the region. There are plans to dredge the Port of Mombasa to accommodate the larger "post-panamax" vessels. New container terminals and ports are in the pipeline in both Kenya and Tanzania. A new container terminal in Mombasa capable of handling 1.2 million TEUs[3] per annum is also planned for completion by 2013 to help accommodate the port's rising throughput, now projected to exceed the existing capacity of 20 million tonnes (BMI, 2011). BMI (2011) also projected that the TEU throughput would be 852,461 TEUs by 2014. Privatisation and transformation into a landlord port are some of the key plans for the Port of Mombasa. A Free Trade Zone (FTZ) is planned to accompany a new port development in Lamu, Kenya.

[3]Twenty-foot equivalent units, a measure used for capacity in container transportation

A new port is also proposed at Mbegani near Bagamoyo, Tanzania. Land acquisition issues and resistance to port privatisation due to the fear of losing heritage and jobs have retarded port reforms in Kenya. This lesson can inform port reform strategies in the region.

These planned upgrading and new developments of airports, seaports, railways, pipelines and roads hold the key to achieving a vibrant EAC bloc firmly interconnected by efficient transport modes. Governance problems are, however, prominent among the key issues. Loans and grants still form a big portion of gross infrastructure financing in individual member states. The grave corruption perception index in the EAC governments like Kenya must be confronted and effectively addressed to make the region attractive to foreign aid and investments. Political stability is also important as an internal factor especially considering the current volatile situations in the neighbouring Somalia, Ethiopia, Eretria and Sudan.

The EAC states do experience common problems in the transport sector. These problems range from issues of safety and security, inefficiency and poor modal mix, to a lack of common standards. Disharmony in transport policies, regulations and standards leads to increased inefficiency and costs of doing business in the region. Transport costs in East Africa are therefore much higher, three to five times, than in Asia; harmonisation of polices and standards contains the promise of lowering transport costs in the EAC by at least 50%.

Road safety is a major concern in the region, a grim fact epitomised in Kenya as the leader in the region in number of reported road accidents and fatalities. The high toll road carnage inflicts on the economy has invigorated road safety campaigns in Kenya. A stakeholders conference on road safety organised by the National Road Safety Council in Kenya and officially opened by President Kibaki in October 2010 brought together stakeholders in the road transport sector. It was unanimously agreed that road crashes are on the rise in Kenya because of the laxity in enforcing road safety rules and poor infrastructure standards. It was observed that non-motorised and intermediate means of transport lacks the kind of dedicated infrastructure and policies required for safe and efficient operations. *Boda bodas* or bicycle taxis, *tuk tuk*s and motorcycle taxis are on the rise.

The conference also emphasised the need to regulate the road transport service providers through registered companies and societies. The conference acknowledged the vast preventive and remedial measures contained in Kenya's Integrated National Transport Policy and the famous *Michuki Rules* on road safety. This can serve as a good lesson to the other EAC states on the high prize of multi-stakeholder and integrated policy approach in ensuring safety and operational efficiency in all transportation modes.

There have also been appreciable efforts to come up with common transport policies in the region, but the process has been meeting several bottlenecks. Harmonising limits of speed and axle loads has featured in many forums including the conference organised by Kenya's National Road Safety Council in October 2010. Adopting a common axle load limit has

encountered problems because Kenya proposed a lower limit of 48 tons as opposed to 56 tons in the other states. These are among the key outstanding issues to be dealt with.

Reducing vehicular emissions is a challenge that calls for joint regional efforts in developing alternative transport modes and fuels that are more environmentally friendly. The awareness creation role must be consistently exercised by all EAC governments to equip users with the information they need to be effective participants in addressing the concerns of transport infrastructure deficits and breach of traffic regulations.

5.2 EAC Regional Transport Infrastructure Development Bottlenecks

The key issues addressed above have informed a detailed breakdown of the bottlenecks facing transport infrastructure development in the EAC. They are listed as follows.

a) Regional political instability

Political instability can drastically cut off efficiency gains. This was evidenced by the poor performance on the indicator of customs efficiency in the year 2008, which coincided with post-election violence in Kenya. Kenya is a key hub for international trade in the EAC. Deliberate pursuit of favourable regional integration and peaceful political environment in the EAC is therefore critical.

b) Escalating car ownership in the EAC

The escalating motorisation level calls for proactive policy measures that encourage mass transit solutions, in order to cater for public transit in a more economical and environmentally friendly way. Tax incentives and rebates in favour of public transport in the region are therefore important considerations.

c) Underperformance of crucial transport modes and sub-optimal modal mix

The Port of Mombasa is critical to business operations in the EAC in terms of transport and logistics. It is underperforming and needs to be modernised. The port, being critical in the EAC, must not relent in the plans to increase capacity for handling bigger vessels and cargo, trans-shipment functions, and other measures to expand regional operations and increase efficiency. Dar es Salaam Port is also facing the threat of congestion due to limited capacity. Privatisation of services, free port and dry port concepts are all worth actualising for increased connectivity within the EAC to facilitate access to global markets. Rail infrastructure is poorly developed in the EAC, yet it promises increased transport sector performance through crucial linkages to the other means of transport. Pipeline

infrastructure also needs to be expanded in view of its cost-effective contribution to petroleum products transport.

d) Inadequate emergency preparedness

Emergency preparedness by the EAC governments is critical to sustaining high quality transport infrastructure. Natural phenomena such as unpredictable and extreme weather events, complicated by climate change, destroy rail and road infrastructure. Such adverse effects take long to recover from especially with a lack of preparation. The EAC bloc needs to strengthen its geophysical exploration networks to facilitate environmental monitoring. In view of the important role of geophysical exploration in disclosing the early signals that inform sound infrastructure planning and emergency preparedness, Kenya's policy think tank – the Kenya Institute for Public Policy Research and Analysis (KIPPRA) has strongly recommended investments in geophysical exploration networks (KIPPRA, 2010). This is a bright idea for the EAC to marshal the rich and diverse research capacity in the region and invest in sound geophysical exploration networks.

5.3 Institutional Challenges Facing EAC Infrastructure Development

The previous discussion of key issues also informed institutional challenges. The institutional challenges revolve around policy and planning, management, financing/funding, data and statistics, institutional and regulatory frameworks as well as human capital development, acquisition and retention. Some of the key issues around these include:

a) **Policy and Planning**

The key policy and planning challenges include linkages to regional and national development clusters, coordination of public expenditures, dealing with potentially adverse national sentiment, need for total network planning, and total transport logistics planning.

b) **Management Flaws**

Poor project management and the low maintenance spirit works against the preservation of existing infrastructure assets. The management of regional infrastructure programmes and projects needs to be re-engineered to ensure rapid and cost-effective delivery of transport infrastructure. Weak monitoring and evaluation practice (M&E) and the challenge of trans-boundary project management call for strict supervision and management based on high and harmonised standards.

c) **Infrastructure Financing Challenges**

There is a big challenge in securing appropriate public and private financing mechanisms to raise the colossal resources required to finance the development and management of

regional transport infrastructure. The transport sector is one that is experiencing more public-private partnership arrangements than other sectors. Public finance is overstretched and too limited to effectively deliver projects and sustain operations and maintenance of completed infrastructure facilities. Governments have therefore turned to finding alternative financing methods by collaborating with the private sector (PPP) in a model of Design, Build, Finance and Operate ("DBFO") for infrastructure projects.

The PPPs promise substantial contribution to infrastructure capital with other benefits including improved productivity and service performance outcomes. There is a need for awareness creation and incentives to encourage the acceptance of fees meant to maintain transportation assets, which is a key driver of the EAC's regional competitiveness.

d) Data and Statistics Gaps

There is a need to close the information and data gap in order to support regional transport infrastructure planning, construction, operation and decommissioning. Sound geophysical exploration networks need to be put in place and upgraded accordingly to provide the data and information needed for emergency preparedness, especially the ones caused by natural phenomena such as the *El Nino* and *tsunamis*.

e) **Institutional and Regulatory Frameworks**

Institutional bottlenecks inhibit capital budget execution, resulting in substantial cost overruns. Low absorption rates of funds allocated for infrastructure development is a strong argument against increasing allocations to the development vote. Analysts have attributed this poor outcome to lengthy and inefficient procurement procedures, late exchequer releases, slow feasibility studies, weak supervision and lethargic monitoring and evaluation (M&E).There is a need for strong regional institutions and regulatory instruments for securing affordable and effective regional transport services. Institutional collaboration across the EAC and building sustainable institutional partnerships are a necessary condition for sufficient capacity building and increased operational efficiency in the regional transport sector.

f) **Human Capital**

There are still missing or weak linkages between regional transport infrastructure development and human capital development interventions. Attracting advanced and relevant skills as well as retaining a critical mass of the same is essential to meeting the challenges of transport infrastructure development in the EAC.

6 Conclusions and Recommendations

This paper assessed various transport indicators to position the EAC countries among other key players in Africa and middle-income economies. The main challenges facing transport infrastructure development in the EAC were assessed.

Infrastructure remains a basic pillar of global competitiveness – a fundamental enabler to development blueprints all over the world. To bolster the competitiveness of the EAC bloc as a common market, transport infrastructure becomes pivotal, as it reduces the cost of doing business and improves the interaction between markets. With the support of regional political leaders who on the one hand promote progressive policy, regulatory and economic frameworks, and on the other promote strong human and institutional capacity for collaborative research, technology and innovation, the EAC is certain of being a superior economic bloc in Africa. The member states stand to gain much from regional public goods especially ports that are firmly interconnected to inland markets and landlocked neighbours through efficient intermodal transport networks.

The EAC is suitably positioned to be a key hub in Sub-Saharan Africa. Its diversity in natural and human resources places it on the vantage position of being a geographical concentration of vertically and horizontally linked firms actively engaging in related lines of business, together with supporting institutions. The potential clusters in geographical context and cross-border interaction provide vast opportunities to increase access to knowledge, ensure cost-effective research and development, achieve economies of scale, amass skilled labour force, solve common problems, and reduce the overall cost of doing business.

The greater momentum for integration that the EAC bloc has exhibited in Sub-Saharan Africa places it ahead in being an attractive trade and investment destination to multinational companies and other countries. It can be seen that an optimal mix of transport modes will greatly contribute to regional integration by ensuring no one mode of transport is overburdened, as has been the case for roads in the region.

Despite the EAC's impressive transport master plans teeming with upgrading and new developments, the EAC's infrastructure network will not be cost-effective if maintenance and regulation continue to be the weakest links. The poor state of the EAC's existing transport infrastructure needs to be improved by effectively addressing the issues of under-maintenance, budget execution failures and high hidden costs.

As an outlook, research and developments towards the provision and production of the EAC's transport infrastructure should be integrated with other crucial infrastructure such as energy infrastructure, technology infrastructure, environmental infrastructure, and geophysical exploration networks. By strengthening and modernising the missing transport links, the EAC bloc can enjoy the opportunities for strong transport and logistics clusters, making the region a globally competitive hub in Africa and the world.

It became evident that for the EAC bloc, leveraging regional transport infrastructure will require effective foundations established around key building blocks as illustrated in Figure 5.

a) Strong political will for regional integration and regional policy frameworks towards integrated transport infrastructure development and cost-effective application of new technologies
b) Innovative infrastructure funding models, mechanisms, and public-private partnerships such as Design-Build-Finance-Operate (DBFO)
c) Enhanced measures for regional transport safety and security, in a stable political environment
d) Appropriate institutional and regulatory framework for quality control
e) Targeted human capital development with emphasis on local capacity and skills retention
f) Development and maintenance of planning and performance data to support policy, planning, and management
g) Research and development including deliberate efforts to use regional transport infrastructure to acquire and/or develop regional technological capabilities. Special cases for landlocked countries need dedicated research and development. Integrated transport models informed by sound spatial planning and traffic engineering will leverage mobility and connectivity within the EAC.

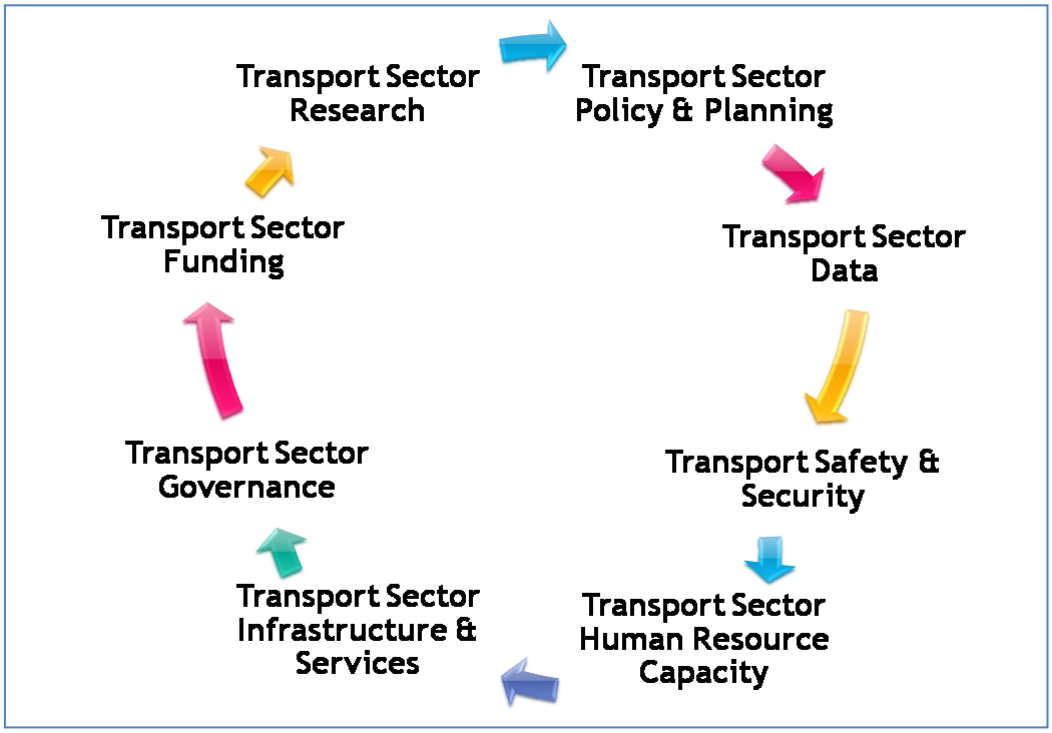

Figure 5: Building blocks for effective delivery of regional transport infrastructure and services

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